

12062
Ilmenite Basalt
 738.7 grams

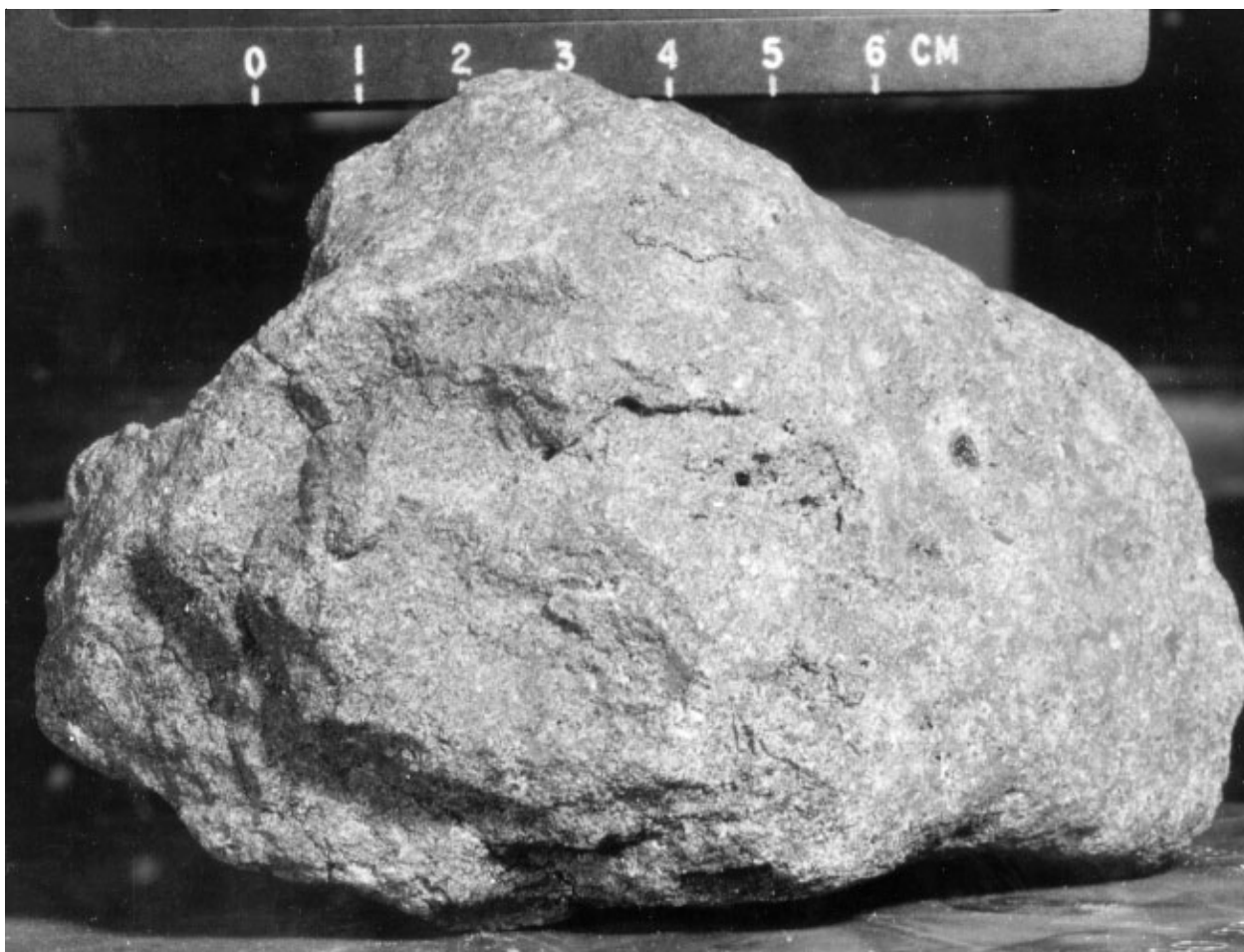


Figure 1: Photo of lunar sample 12062,0 showing large zap pit with black glass lining. Scale is in cm. NASA #S69-61661.

Introduction

12062 is an subophitic ilmenite basalt with high percentage of pyroxene and medium grain size (figure 2). It has not been dated.

Petrography

Neal et al. (1994) analyzed 12062 and studied a covered thin section, but couldn't determine mineral contents. From the mineral mode and the chemical composition, they determined that 12062 is an ilmenite basalt with ophitic to sub-ophitic texture with grain size about 1 mm.

Mineralogical Mode for 12062

	Neal et al. 1994
Olivine	- -
Pyroxene	57
Plagioclase	32.2
Ilmenite	0.3
Chromite +Usp	5.2
mesostasis	3.5
"silica"	1.4

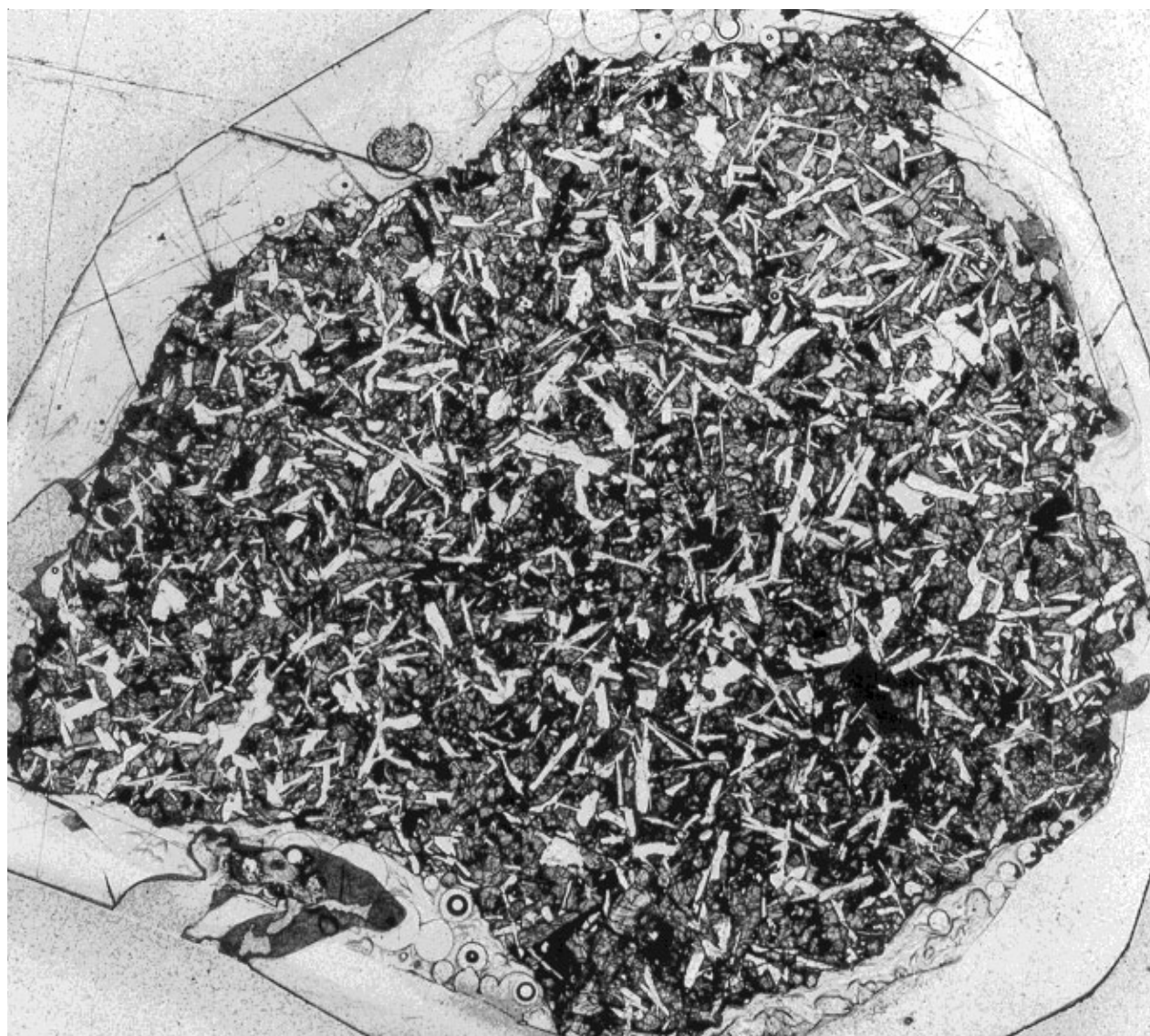


Figure 2: Photomicrograph of thin section 12062,9. Scale about 3 cm. NASA #S70-30255.

Chemistry

The chemical composition of 12062 was determined by Neal et al. (1994) who obtained values for K and Th similar to the whole rock values determined by Rancitelli et al. (1971).

Radiogenic age dating

12062 has not been dated.

Cosmogenic isotopes and exposure ages

Rancitelli et al. (1971) determined the cosmic ray induced activity of ^{22}Na (33 dpm/kg), ^{26}Al (76 dpm/kg) and ^{54}Mn (33 dpm/kg).

Other Studies

Bogard et al. (1971) reported the content and isotopic composition of rare gases in 12062.

List of Photo #s for 12062

S69-61600 – 61662	
S69-60860 – 60883	mug
S70-49524	TS
S70-49843 – 49846	TS
S70-49528 – 49533	TS



Figure 3: Photomicrographs of thin section 12062,11 (plane-polarized, crossed-nicols). Field of view is 2.6 mm.

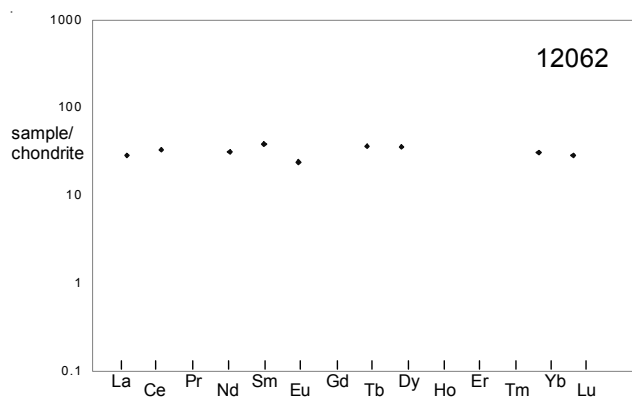


Figure 4: Rare-earth-element composition of 12062 (from Neal et al. 1994).

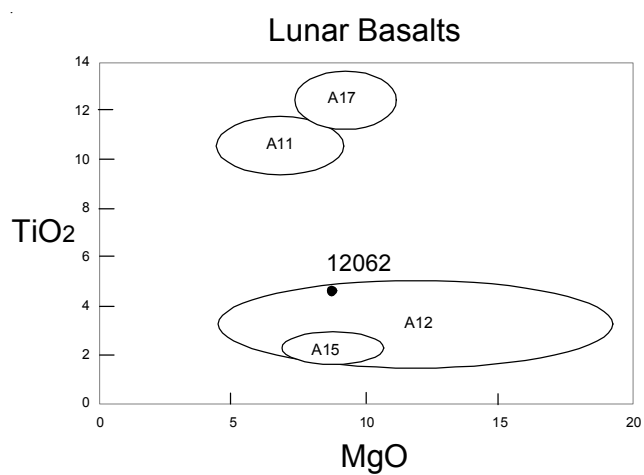


Figure 5: Composition of 12062 compared with that of other lunar basalts.

Table 1. Chemical composition of 12062.

reference	Neal94	LSPET70	O'Kelly71	Rancitelli71
weight	.617 g	730 g	739 g	727 g
SiO ₂ %				
TiO ₂	4.6 (a)			
Al ₂ O ₃	10.3 (a)			
FeO	20.7 (a)			
MnO	0.266 (a)			
MgO	8.1 (a)			
CaO	9.9 (a)			
Na ₂ O	0.297 (a)			
K ₂ O	0.06 (a)	0.063 (b)	0.061 (b)	0.071 (b)
P ₂ O ₅				
S %				
sum				
Sc ppm	59.1 (a)			
V	140 (a)			
Cr	2120 (a)			
Co	32.7 (a)			
Ni				
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb				
Sr	180 (a)			
Y				
Zr				
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	69 (a)			
La	6.9 (a)			
Ce	20.2 (a)			
Pr				
Nd	14.6 (a)			
Sm	5.8 (a)			
Eu	1.36 (a)			
Gd				
Tb	1.34 (a)			
Dy	8.8 (a)			
Ho				
Er				
Tm				
Yb	5 (a)			
Lu	0.7 (a)			
Hf	3.9 (a)			
Ta	0.45 (a)			
W ppb				
Re ppb				
Os ppb				
Ir ppb				
Pt ppb				
Au ppb				
Th ppm	0.77 (a)	0.81 (b)	0.83 (b)	0.871 (b)
U ppm		0.21 (b)	0.22 (b)	0.241 (b)

technique: (a) INAA , (b) radiation counting

